REMARKS

Claims 1-33 were pending in the application. Claims 1, 17, 24, 29, 32 and 33 have been amended. Claims 34-40 have been added. Claims 1, 17, 24, 29, 32 and 33 are independent claims. No new matter has been added by this amendment.

Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, reconsideration and allowance of the present application are respectfully requested.

Claim Rejections – 35 USC § 102

Claims 1, 17, 24, 29, 32 and 33 have been amended. Support for the amendments to claims 1, 24, 32 and 33 is found, for example, at one or more portions of page 10, line 6-page 11, line 2 and page 14, lines 17-28. Support for the amendments to claims 17 and 29 is found, for example, at one or more portions of page 3, line 21-page 4, line 6; page 5, line 26-page 6, line 6 and page 12, line 1-page 13, line 17.

Claims 34-40 have been added. Support for claims 34-35 and 38-39 is found, for example, at one or more portions of page 10, line 6-page 11, line 2 and page 14, lines 17-28. Support for claims 36-37 and 40 is found, for example, at one or more portions of page 3, line 21-page 4, line 6; page 5, line 26-page 6, line 6 and page 12, line 1-page 13, line 17.

No new matter has been added by this amendment.

Claim Rejections – 35 USC § 102

The Office Action rejects claims 1-33 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,860,064 (Henton).

Reconsideration and withdrawal of the rejections are respectfully requested.

Claim 1

Independent claim 1 has been amended.

Independent claim 1 now recites a method, comprising: identifying text to convert to speech; selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics, wherein said selected speech style sheet defines pronunciation rules for a speech category and wherein another speech style sheet from said set of available speech style sheets defines pronunciation rules for another speech category; marking said text to associate said text with said selected speech style sheet; and converting said text to speech having said desired speech characteristics by applying a low level markup generated by said speech style sheet.

Henton does not teach or suggest the method of claim 1.

Henton discloses a method and apparatus for automatic generation of vocal emotion in a synthetic text-to-speech system (title). FIG. 1 is a generalized block diagram of an appropriate computer system 10 (col. 5, lines 18-19). FIG. 2 is a preferred embodiment of a graphical user interface editor 201 (col. 5, lines 36-37). Graphical editor 201 provides for user modification of the volume and duration of speech synthesized text (col. 5, lines 46-48). Graphical editor 201 also provides for user modification of the vocal emotion of speech synthesized text via selection buttons 211 through 217 (note that the emotion/color/font style indications in parenthesis are not shown in the screen display) (col. 5, lines 47-56). In the preferred embodiment , the user selects a word of text by manipulating input controller 15 so that pointer 205 is placed on or alongside the desired word and then initiating the necessary selection operation, e.g., depressing a button on the mouse in the preferred embodiment (col. 5, lines 61-66). Similarly, other well known text selection mechanisms, such as keyboard control of cursor 203, are equally applicable (col. 6, lines 3-5). Once a portion of text has been selected, the volume and duration of the resulting speech output can be modified by the user (col. 6, lines 8-11) and the vocal emotion of that selected text can be modified by the user (col. 7, lines 61-63). The preferred manner of implementation is in the context of creating vocal emotions that may be associated with text that is to be read by a text-to-speech synthesizer (col. 9, lines 16-18). The user would be provided

with a list or display of the controls available for the specification of vocal emotions (col. 9, lines 18-21).

Henton further discloses that once the vocal emotion of the text has been specified, the translation between specification of vocal emotion color (or font style) and parameterization becomes a simple matter of a table look-up process (col. 9, lines 44-47). FIG. 5 is a flowchart of the graphical user interface editor to vocal emotion text-to-speech modification communication and translation (col. 5, lines 11-14). After a portion of text has been selected 501, and a particular vocal emotion has been chosen 503, the appropriate speech synthesizer values are obtained via look-up table 505, and thereby applied 507 by embedding the appropriate speech synthesizer commands in the selected text (col. 9, lines 49-54). Table 2, gives examples of the defined emotions of the preferred embodiment of the present invention with their associated vocal emotion values (col. 9, lines 56-58). According to Henton, the values are applicable to General American English although the invention is applicable to other dialects and languages, albeit with different vocal emotion values specified and the particular values shown are easily modifiable, by the system implementor and/or the user, to thus allow for differences in cultural interpretations and user/listener perceptions (col. 9, lines 58-64).

According to Henton, the values in Table 2 are relative to the default neutral speech setting, and in particular, the values specified are for a female voice (col. 9, line 66-col. 10, line 2). For a male voice, the values in Table 2 would need to be altered (col. 10, lines 2-3). For example, in the preferred embodiment, the default specification for a male voice would use a pitch mean of 43 and a pitch range of 8 (thus specifying a lower, but more dynamic, range than the female voice of 56; 6) (col. 10, lines 3-7). However, in general, neither volume nor speaking rate is gender specific and as such these values would not need to be altered when changing the gender of the speaking voice (col. 10, lines 8-10). As for determining values for other vocal emotions when changing to a male speaking voice, these values would merely change as the female voice specifications did, again relative to the default specification (col. 10, lines 11-14). Lastly, note that the default speech rate is 175 words per minute (wpm) whereas a realistic human speaking rate range is 50-500 wpm (col. 10, lines 14-16). In the preferred embodiment, prosodic commands for Baseline Pitch (pbas), Pitch Modulation (pmod), Speaking Rate (rate),

Volume (volm), and Silence (slnc), may be applied at all levels of text, i.e., passage, sentence, phrase, word, phoneme, allophone (col. 10, lines 63-67).

Henton further discloses that an example that shows the result of applying different vocal emotions to different portions of text (col. 11, lines 1-2). The first scenario is the result of merely inputting the text into the text-to-speech system and using the default vocal emotion parameters: 1. [Default] [[pbas 56; pmod 6; rate 175; volm 0.5]] Is my car ready? Sorry, we're closing for the weekend. What? I was promised it would be done today. I want to know what you're going to do to provide me with transportation for the weekend! (col. 11, lines 2-18). After the application of vocal emotion parameters according to the preferred embodiment (either through use of the graphical user interface, direct textual insertion, or other automatic means of applying the defined vocal emotion parameters), the text would look like the following scenario: 2. [Default] [[pbas 56; pmod 6; rate 175; volm 0.5]] Is my car ready? [Disinterested] [[pbas 55; pmod 5; rate 170; volm 0.5]] Sorry, we're closing for the weekend. [Angry 1] [[pbas 35; pmod 18; rate 125; volm 0.3]] What? I was promised it would be done today. [Angry 2] [[pbas 80; pmod 28; rate 230; volm 0.7]] I want to know what you're going to do to provide me with transportation for the weekend! (col. 11, lines 22-35). According to Henton, the second scenario provides the speech synthesizer with speech parameters which will result in speech output through a loudspeaker having vocal emotion (col. 11, lines 36-38).

However, Henton does not teach or suggest a method, comprising: identifying text to convert to speech; selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics, wherein said selected speech style sheet defines pronunciation rules for a speech category and wherein another speech style sheet from said set of available speech style sheets defines pronunciation rules for another speech category; marking said text to associate said text with said selected speech style sheet; and converting said text to speech having said desired speech characteristics by applying a low level markup generated by said speech style sheet, as recited in claim 1.

Notably, even if choosing a vocal emotion constitutes selecting a speech style sheet from a set of available speech style sheets, as is asserted in the Office Action, Henton does not teach or suggest that the asserted speech style sheet defines pronunciation rules for a speech category

and that another speech style sheet from the set of available speech style sheets defines pronunciation rules for another speech category.

Independent claim 1 should therefore be allowed.

Claim 17

Independent claim 17 has been amended.

Independent claim 17 now recites a speech style sheet, comprising: at least one voice style associated with at least one voice-type, said at least one voice style relating a high level markup of said voice-type to a low level markup of said voice-type, said at least one voice style including a voice style representing a voice of a particular gender speaking in a language with an accent, said at least one voice style further including a voice style representing a voice of said particular gender speaking in said language with another accent.

Henton does not teach or suggest the speech style sheet of claim 17.

Notably, even if Henton discloses a speech style sheet, as is asserted by the Office Action, and even if such speech style sheet includes at least one voice style, as is asserted by the Office Action, Henton does not teach or suggest that the asserted at least one voice style includes a voice style representing a voice of a particular gender speaking in a language with an accent, and that the asserted at least one voice style further includes a voice style representing a voice of said particular gender speaking in said language with another accent.

Independent claim 17 should therefore be allowed.

Claim 24

Independent claim 24 has been amended.

Independent claim 24 now recites an apparatus, comprising: a processor having access to at least one speech style sheet, said at least one speech style sheet containing a definition of a voice style associated with a voice-type, and said definition relating a high level markup of said

voice-type to a low level markup of said voice-type, wherein said processor is operative to convert said high level markup to said low level markup, wherein said at least one speech style sheet includes a speech style sheet that defines pronunciation rules for a speech category and wherein said at least one speech style sheet includes another speech style sheet that defines pronunciation rules for another speech category; a user interface device for applying said at least one voice style to text associated with said voice-type, said user interface being in communication with said processor; and an output device connected to said processor for converting said text with said low level markup to speech.

Henton does not teach or suggest the apparatus of claim 24.

Notably, even if Henton discloses at least one speech style sheet, as is asserted in the Office Action, Henton does not teach or suggest that the asserted at least one speech style sheet includes a speech style sheet that defines pronunciation rules for a speech category and that the asserted at least one speech style sheet includes another speech style sheet that defines pronunciation rules for another speech category.

Independent claim 24 should therefore be allowed.

Claim 29

Independent claim 29 has been amended.

Independent claim 29 now recites a system, comprising: a designer device for creating speech style sheets; a speech style sheet at least partially created by said designer device, said speech style sheet defining a first voice style representing a voice of particular gender speaking in a language with an accent, said speech style sheet further defining a second voice style representing a voice of said particular gender speaking in said language with another accent; a text-to-speech device for receiving text associated with a voice-type, said text having a high level markup associated with said first voice style, said text-to-speech device having access to said speech style sheet and also having: a memory for storing computer executable code; and a processor for executing the program code stored in memory, wherein the program code includes; code to determine, by accessing said speech style sheet, a low level markup associated with said

high level markup; and code to convert said high level markup of said text to said low level markup; and an output device for producing expressive speech using said text with said low level markup, said output device in communication with said text-to-speech device.

Henton does not teach or suggest the system of claim 29.

Notably, even if Henton discloses a speech style sheet, as is asserted by the Office Action, Henton does not teach or suggest that the asserted speech style sheet defines a first voice style representing a voice of particular gender speaking in a language with an accent, and that the asserted speech style sheet further defines a second voice style representing a voice of said particular gender speaking in said language with another accent.

Independent claim 29 should therefore be allowed.

Claim 32

Independent claim 32 has been amended.

Independent claim 32 now recites an article of manufacture, comprising: a computer usable medium having computer readable program code means embodied therein for producing expressive text-to-speech, comprising: computer readable program code means for identifying text to convert to speech; computer readable program code means for selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics, wherein said selected speech style sheet defines pronunciation rules for a speech category and wherein another speech style sheet from said set of available speech style sheets defines pronunciation rules for another speech category; computer readable program code means for marking said text to associate said text with said selected speech style sheet; and computer readable program code means for converting said text to speech having said desired speech characteristics by applying a low level markup associated with said speech style sheet.

Henton does not teach or suggest the article of claim 32.

Notably, even if choosing a vocal emotion constitutes selecting a speech style sheet from a set of available speech style sheets, as is asserted in the Office Action, Henton does not teach

or suggest that the asserted speech style sheet defines pronunciation rules for a speech category and that another speech style sheet from the available speech style sheets defines pronunciation rules for another speech category.

Independent claim 32 should therefore be allowed.

Claim 33

Independent claim 33 has been amended.

Independent claim 33 now recites a system for producing expressive text-to-speech, comprising: means for identifying text to convert to speech; means for selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics, wherein said selected speech style sheet defines pronunciation rules for a speech category and wherein another speech style sheet from said set of available speech style sheets defines pronunciation rules for another speech category; means for marking said text to associate said text with said selected speech style sheet; and means for converting said text to speech having said desired speech characteristics by applying a low level markup associated with said speech style sheet.

Henton does not teach or suggest the system of claim 33.

Notably, even if choosing a vocal emotion constitutes selecting a speech style sheet from a set of available speech style sheets, as is asserted in the Office Action, Henton does not teach or suggest that the asserted speech style sheet defines pronunciation rules for a speech category and that another speech style sheet from the set of available speech style sheets defines pronunciation rules for another speech category.

Independent claim 33 should therefore be allowed.

Dependent claims

Claims 2-16 and 34-35 depend from independent claim 1 and therefore should be allowed for at least the reasons set forth above with respect to independent claim 1.

Claims 18-23 and 36-37 depend from independent claim 17 and therefore should be allowed for at least the reasons set forth above with respect to independent claim 17.

Claims 25-28 and 38-39 depend from independent claim 24 and therefore should be allowed for at least the reasons set forth above with respect to independent claim 24.

Claims 30-31 and 40 depend from independent claim 29 and therefore should be allowed for at least the reasons set forth above with respect to independent claim 29.

C O N C L U S I O N

For at least the reasons set forth above, Applicants respectfully submit that the present application is in condition for allowance. Accordingly, reconsideration and allowance of the present application are respectfully requested.

Because the reasons set forth above are sufficient to overcome the rejections set forth in the outstanding Office Action, Applicants do not address some of the assertions set forth therein and/or other possible reasons for overcoming the rejections. Nonetheless, Applicants reserve the right to address such assertions and/or to present other possible reasons for overcoming the rejections in any future paper and/or proceeding.

If the Examiner believes that a telephone interview would expedite the prosecution of this application in any way, the Examiner is cordially requested to contact the undersigned via telephone at (203) 972-0049.

Respectfully submitted,

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